

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please cancel claims 1-57.

Claim 58. (New) A process for the production of a composite material comprising collagen, brushite and one or more glycosaminoglycans, said process comprising the steps of providing an acidic aqueous solution comprising collagen, a calcium source and a phosphorous source and one or more glycosaminoglycans, and

precipitating the collagen, the brushite and the one or more glycosaminoglycans together from the aqueous solution to form a triple co-precipitate.

Claim 59. (New) A process as claimed in claim 58, wherein the solution has a pH of from 2.5 to 6.5.

Claim 60. (New) A process as claimed in claim 59, wherein the solution has a pH of from 3 to 4.5.

Claim 61. (New) A process as claimed in claim 60, wherein the solution has a pH of from 3.8 to 4.2.

Claim 62. (New) A process as claimed in claim 58, wherein the calcium source is selected from one or more of calcium nitrate, calcium acetate, calcium chloride, calcium carbonate and calcium alkoxide, calcium hydroxide, calcium silicate, calcium sulphate, calcium gluconate and the calcium salt of heparin.

Claim 63. (New) A process as claimed in claim 58, wherein the phosphorus source is selected from one or more of ammonium-dihydrogen phosphate, diammonium hydrogen phosphate, phosphoric acid, disodium hydrogen orthophosphate 2-hydrate and trimethyl phosphate.

Claim 64. (New) A process as claimed in claim 58, wherein the one or more glycosaminoglycans are selected from chondroitin sulphate, dermatan sulphate, heparin, heparin sulphate, keratin sulphate and hyaluronic acid.

Claim 65. (New) A process as claimed in claim 58, wherein the solution has a temperature of from 4 to 50°C.

Claim 66. (New) A process as claimed in claim 58, wherein the ratio of collagen to the total amount of one or more glycosaminoglycans in the solution is from 8:1 to 30:1 by weight.

Claim 67. (New) A process as claimed in claim 58, wherein the solution comprises calcium ions and the ratio of collagen to the calcium ions is from 1:40 to 500:1 by weight.

Claim 68. (New) A process as claimed in claim 58, wherein ratio of collagen to brushite in the co-precipitate is from 10:1 to 1:100 by weight.

Claim 69. (New) A process as claimed in claim 58, wherein the solution comprises calcium ions and the concentration of calcium ions in solution is from 0.00025 to 1 M.

Claim 70. (New) A process as claimed in claim 58, wherein the solution comprises phosphate ions and the concentration of phosphate ions in solution is from 0.00025 to 1 M.

Claim 71. (New) A process as claimed in claim 58, wherein the concentration of collagen in the solution is from 1.0 to 20 g/L.

Claim 72. (New) A process as claimed in claim 58, wherein the total concentration of the one or more glycosaminoglycans in the solution is from 0.01 to 1.5 g/L.

Claim 73. (New) A process for the production of a composite biomaterial comprising collagen, octacalcium phosphate and one or more glycosaminoglycans, said process comprising the steps of

providing a composite material comprising collagen, brushite and one or more glycosaminoglycans, and

converting at least some of the brushite in the composite material to octacalcium phosphate by hydrolysation.

Claim 74. (New) A process as claimed in claim 73, wherein the composite material comprises or consists essentially of a triple co-precipitate comprising collagen, brushite and one or more glycosaminoglycans.

Claim 75. (New) A process as claimed in claim 73, wherein the step of hydrolysation of brushite to octacalcium phosphate comprises contacting the composite material with an aqueous solution, said aqueous solution being at or above the pH at which octacalcium phosphate becomes thermodynamically more stable than brushite.

Claim 76. (New) A process as claimed in claim 75, wherein said aqueous solution has a pH of from 6 to 8.

Claim 77. (New) A process as claimed in claim 76, wherein said aqueous solution has a pH of from 6.3 to 7.

Claim 78. (New) A process for the production of a composite biomaterial comprising collagen, apatite and one or more glycosaminoglycans, said process comprising the steps of providing a composite material comprising collagen, brushite and one or more glycosaminoglycans, and converting at least some of the brushite in the composite material to apatite by hydrolysis.

Claim 79. (New) A process as claimed in claim 78, wherein the composite material comprises or consists essentially of a triple co-precipitate comprising collagen, brushite and one or more glycosaminoglycans.

Claim 80. (New) A process as claimed in claim 78, wherein the step of hydrolysis of brushite to apatite comprises contacting the composite material with an aqueous solution, said aqueous solution being at or above the pH at which apatite becomes thermodynamically more stable than brushite.

Claim 81. (New) A process as claimed in claim 80, wherein said aqueous solution has a pH of from 6.65 to 9.

Claim 82. (New) A process as claimed in claim 73, wherein the conversion of brushite to octacalcium phosphate and/or apatite is carried out at a temperature of from 20 to 50°C.

Claim 83. (New) A process as claimed in claim 1, further comprising the steps of crosslinking the collagen and the one or more glycosaminoglycans in the composite material or triple co-precipitate.

Claim 84. (New) A precursor material for transforming into a synthetic biomaterial, said precursor material comprising a composite material comprising collagen, brushite and one or more glycosaminoglycans.

Claim 85. (New) A precursor material as claimed in claim 84, wherein the composite material comprises or consists essentially of a triple co-precipitate comprising collagen, brushite and one or more glycosaminoglycans.

Claim 86. (New) A composite biomaterial comprising a triple co-precipitate of collagen, brushite and one or more glycosaminoglycans.

Claim 87. (New) A biomaterial comprising particles of one or more calcium phosphate materials, collagen and one or more glycosaminoglycans, wherein said collagen and said one or more glycosaminoglycans are crosslinked and form a matrix,

said particles of calcium phosphate material are dispersed in said matrix, and

said calcium phosphate material is selected from one or more of brushite, octacalcium phosphate and/or apatite.